

Application No. 10/803,805
Amendment dated November 26, 2007
Reply to Non-Final Office Action of August 24, 2007

Remarks

The Examiner has rejected claim 28 under 35 U.S.C. §112, second paragraph, as being indefinite for insufficient antecedent basis for “the etching module”. This claim has been amended to overcome this rejection and this and other claims have been amended to correct other formal errors and to otherwise clarify the claims.

The Examiner also has: rejected, under 35 U.S.C. §102(b), claim 1-2, 8-10 and 13, as being anticipated by Ficnh U.S. Patent No. 5,085,410 (“*Ficnh*”); rejected claims 2-5, 7, 11-12 and 17-29 also as being anticipated by *Ficnh*, or, in the alternative, under 35 U.S.C. §103(a) as being obvious over *Ficnh*; rejected, under 35 U.S.C. §103(a), claims 6 and 15-16 as being unpatentable over *Ficnh* further in view of Mooring et al. U.S. Patent No. 6,267,545, and claim claim 14 as being unpatentable over *Ficnh* further in view of Gujer et al. U.S. Patent No. 6,958,098.

Applicants traverse the §102(b) rejection for the reason that *Ficnh* fails to disclose a processing system comprising a processing module having mounting structure configured to present a maintenance item for pick up by a wafer transfer mechanism configured to transfer the maintenance item. The *Ficnh* reference discloses a maintenance system for a uranium enrichment system that provides a dedicated component handler system that exchanges portions of an enrichment chamber for maintenance. In the *Ficnh* system, only radioactive material is processed, not semiconductor wafers.

With the present invention, the ability to service a processing module component or “maintenance item” within the vacuum environment of a wafer processing system can be provided merely by adding a properly equipped processing module to an existing wafer processing system, with little or no modification to the existing processing system. For the handling of the maintenance item, the claimed feature relies on the wafer transfer system of the existing processing system design, with its mechanical components and available motions that were designed to handle wafers. The transfer module would only have to be adapted by changes in control software and occasionally by replacement or modification of the end effector on the wafer transfer system’s wafer transfer arm.

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In the specification of the present application, the background section notes that “modification of the wafer handling components of a processing tool, such as a transfer arm mechanism or wafer handler, cannot as a practical matter be required of the owner of the tool to accommodate the service of a module that is but one of many of which the tool owner may purchase. This limits the actions that a transfer arm can execute when removing and reattaching a part.” See paragraph [0004].

The invention summary section of the application further notes that a “transfer system transfers substrates among and through the ports and the modules and systems connected to them (paragraph [0006]), and that, with the invention, “the transfer system of the processing system is used to transfer parts or components of the processing system to and from the processing module for service or replacement. The parts are moved without excessive motions or special actions being performed by the transfer arm and without the kind of manipulation of mounting structure and fastening elements that can cause particle generation that can contaminate the chamber. Rather, the parts to be replaced are configured to be picked up by the normal motions of a transfer arm that are used in the handling of wafers to be processed, and actuators necessary to release and present the parts in a condition to be picked up by the transfer arm are provided in the process module. In many embodiments, a generic transfer module and transfer mechanism, such as a standard fork type end effector, can be used. In other embodiments, a modified end effector can be used, or a transfer arm or transfer module with minimal modification. . .” (paragraph [0007]).

The claims have been further amended to emphasize the new and unobvious features of the invention pointed out above.

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Accordingly, it is submitted that the claims, as amended, are allowable. An early allowance is respectfully requested.

The fee for added claims is being submitted herewith. Applicants do not believe that any additional fees are due in connection with this submission. However, if such extension is due or any other fees are necessary, the Commissioner may consider this to be a request for such and charge any necessary fees to deposit account 23-3000.

Respectfully submitted,

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